

# Notice of Allowability

Application No.

10/779,786

Examiner

John Ruggles

Applicant(s)

YAMAGUCHI ET AL.

Art Unit

1756

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the 11/8/06 amendment.
2. ☒ The allowed claim(s) is/are 20 and 21.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All   b) ☐ Some\*   c) ☐ None   of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

Art Unit: 1756

## **DETAILED ACTION**

### ***Response to Amendment***

In the current amendment filed on 11/8/06, claims 1-19 are now cancelled, claim 20 is currently amended, and claim 21 is newly added.

All previous objections and rejections are withdrawn in view of (A) the current amendment with accompanying remarks and (B) the examiner's amendment shown below.

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to Applicants, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Steven Warner on 12/6/06.

The application has been amended as follows:

#### **IN THE CLAIMS:**

At claim 20 line 3, change "an object to be exposed to light is placed;" to --an object to be exposed to light is placed; and--.

At claim 20 between lines 3 and 4, insert as a separate indented line --a photomask including: --.

At claim 20 lines 4-5, change "a deformable membrane portion having on one surface of the membrane portion a shielding membrane that has a micro aperture; and" to --(i) a deformable

Art Unit: 1756

membrane portion having on ~~[[one]]~~ a first surface of the deformable membrane portion a light shielding membrane that has a micro aperture; and--.

At claim 20 lines 6-7, change “a substrate for supporting a peripheral region of the other surface of the membrane portion” to --~~(ii)~~ a substrate for supporting a peripheral region of the ~~other~~ a second surface of the deformable membrane portion--.

At claim 20 lines 8-9, change “the membrane portion in a sagged condition and the photomask is designed to have a structure so as to relieve a stress that is generated” to --the deformable membrane portion in a sagged condition in close contact with the object, ~~[[and]]~~ the photomask ~~is designed to have~~ has a stress relieving structure ~~so as~~ to relieve ~~[[a]]~~ stress that is generated--.

At claim 20 line 10, change “the membrane portion” to --the deformable membrane portion--, at both occurrences.

At claim 20 line 11, change “the structure” to --the stress relieving structure--.

At claim 20 lines 12, 13, and 14, change “structure” to --~~structure~~ means--, at each occurrence after “(a)”, “(b)”, and “(c)”, respectively.

At claim 20 lines 15-16, change “the other surface of the membrane portion and stretches toward a center of the other surface of the member portion” to --the ~~[[other]]~~ second surface of the deformable membrane portion in which the intermediate layer ~~[[and]]~~ stretches from the peripheral region toward a center of the ~~[[other]]~~ second surface of the ~~member~~ deformable membrane portion--.

Art Unit: 1756

At claim 21 lines 2-3, change “on one surface of the membrane portion a shielding membrane that has a micro aperture;” to --on [[one]] a first surface of the deformable membrane portion a light shielding membrane that has a micro aperture;--.

At claim 21 lines 4-5, change “the other surface of the membrane portion” to --~~the other~~ a second surface of the deformable membrane portion--.

At claim 21 lines 6-7, change “the membrane portion in a sagged condition and the photomask is designed to have a structure so as to relieve a stress that is generated” to --the deformable membrane portion in a sagged condition , [[and]] the near-field exposure photomask ~~is designed to have~~ has a stress relieving structure ~~so as~~ to relieve [[a]] stress that is generated--.

At claim 21 line 8, change “the membrane portion” to --the deformable membrane portion--, at both occurrences.

At claim 21 line 9, change “the structure” to --the stress relieving structure--.

At claim 21 lines 10, 11, and 12, change “structure” to --~~structure~~ means--, at each occurrence after letters “(a)”, “(b)”, and “(c)”, respectively.

At claim 21 lines 13-14, change “the other surface of the membrane portion and stretches toward a center of the other surface of the member portion” to --the [[other]] second surface of the deformable membrane portion in which the intermediate layer [[and]] stretches from the peripheral region toward a center of the [[other]] second surface of the ~~member~~ deformable membrane portion--.

Art Unit: 1756

**IN THE SPECIFICATION** (as presented in the 11/8/06 marked-up substitute specification):

Amend the title on page 1 as follows: ~~--PHOTOMASK FOR NEAR-FIELD EXPOSURE, NEAR-FIELD EXPOSURE METHOD, AND NEAR-FIELD EXPOSURE APPARATUS AND NEAR-FIELD EXPOSURE PHOTOMASK--~~.

At paragraph [0030] line 3, change “stretches toward the membrane portion side” to --stretches from a peripheral region of the photomask toward a center of the membrane portion side photomask--.

At [0055] line 2, change “Embodiments 5 and 6” to --Embodiment[[s]] 5 ~~and 6~~--.

At [0056] line 2, change “Embodiment 7” to --Embodiment [[7]] 6--.

At [0059] line 2, change “membrane portion” to --membrane portion of a conventional photomask--.

At [0063] line 2, change “instead of the border” to --instead of only at the border--.

At [0066] line 1, change “set large” to --~~set large~~ increase--.

At [0090] line 2, change “at once” to --at [[once]] the same time--.

Amend the abstract on page 25 of the 11/8/06 marked-up substitute specification as follows: --A [[a]] near-field exposure apparatus including a light source, a stage on which an object to be exposed to light is placed, and a photomask with a deformable membrane portion having on [[one]] a first surface of the membrane portion a light shielding membrane that has a micro aperture[[,]] and a substrate for supporting a peripheral region of ~~the other~~ a second surface of the deformable membrane portion. [[The]] ~~exposure~~ Exposure is conducted [[in]] with the deformable membrane portion in a sagged condition [[and]] . [[the]] The photomask is designed to have has a stress relieving structure so as to relieve stress that is generated at a

Art Unit: 1756

border between the deformable membrane portion and the substrate when the deformable membrane portion sags. The stress relieving structure is one of: ~~a structure including a~~ reinforcing member placed at the border, ~~such that~~ the substrate ~~[[is]]~~ being partially thinned near the border, and ~~including~~ an intermediate layer that is formed between the substrate and the ~~[[other]]~~ second surface of the deformable membrane portion and ~~stretches toward a center of the~~ ~~other surface of the member portion.~~

***Allowable Subject Matter***

Claims 20 and 21 are allowed.

***Conclusion***

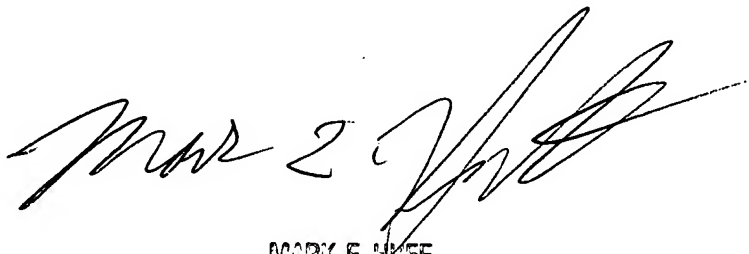
Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Ruggles whose telephone number is 571-272-1390. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1756

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jsr



MARK F. HUFF  
SUPERVISOR/ PATENT EXAMINER  
TECHNOLOGY CENTER 1700